

In the Claims:

Please amend the claims as follows:

1. (Currently Amended) A set ligand profile ~~which is characteristic for a given cell, the ligand profile comprising a representation~~ of at least ten different polypeptide ligands that are produced in a the cell; and wherein all of the at least ten different polypeptide ligands bind to a single type of multi-ligand binding receptor present in the cell, wherein ~~the representation characterizes~~ each individual ligand is characterized based upon at least three physical or chemical attributes; provided that, if the multi-ligand binding receptor is an MHC class I or class II receptor, at least 500 polypeptide ligands are represented in the set of polypeptide ligands ~~ligand profile~~; and further provided that the set of polypeptide ligands ~~ligand profile~~ is a reproducible characteristic of the cell.

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2. (Currently Amended) A set ligand profile ~~which is characteristic for a given cell, the ligand profile comprising a representation~~ of at least ten different polypeptide ligands that are produced in a the cell; and wherein all of the at least ten different polypeptide ligands bind to a single type of multi-ligand binding receptor present in the cell, wherein ~~the representation characterizes~~ each individual ligand is characterized based upon at least two physical or chemical attributes, one of said attributes being mass or mass-to-charge ratio; provided that, if the multi-ligand binding receptor is an MHC class I or class II receptor, at least 500 polypeptide ligands are represented in the set of polypeptide ligands ~~ligand profile~~; and further provided that the set of polypeptide ligands ~~ligand profile~~ is a reproducible characteristic of the cell.

3. (Currently Amended) A set ligand profile ~~which is characteristic for a given cell, the ligand profile comprising a representation~~ of at least ten different polypeptide ligands that are produced in a the cell; and wherein all of the at least ten different polypeptide ligands bind to a single type of multi-ligand binding receptor present in the cell, wherein ~~the representation characterizes~~ each individual ligand is characterized based upon at least one physical or chemical attribute, the at least one physical or chemical attribute comprising amino acid sequence; provided that, if the multi-ligand binding receptor is an MHC class I or class II receptor, at least

50 polypeptide ligands are represented in the set of polypeptide ligands ligand-profile; and further provided that the set of polypeptide ligands ligand-profile is a reproducible characteristic of the cell.

4. (Currently Amended) A set of at least ten different polypeptide ligands that are produced in a cell and bind to a single type of multi-ligand binding receptor present in the cell, wherein each individual ligand is characterized based upon ligand-profile ~~which is characteristic for a given cell, the ligand-profile comprising ion fragmentation patterns for at least ten different polypeptide ligands produced in the cell, wherein all of the at least ten different polypeptide ligands bind to a single type of multi-ligand binding receptor present in the cell~~; provided that, if the multi-ligand binding receptor is an MHC class I or class II receptor, at least 100 polypeptide ligands are represented in the set of polypeptide ligands ligand-profile; and further provided that the set of polypeptide ligands ligand-profile is a reproducible characteristic of the cell.

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5. (Currently Amended) A set of at least ten different polypeptide ligands that are produced in a cell and bind to a single type of multi-ligand binding receptor present in the cell, wherein each individual ligand is characterized based upon ligand-profile ~~which is characteristic for a given cell, the ligand-profile comprising amino acid sequence, and wherein the sequences of at least ten different polypeptide ligands have produced in the cell and having distinct core peptides, wherein all of the at least ten different polypeptide ligands bind to a single type of multi-ligand binding receptor present in the cell~~; provided that, if the multi-ligand binding receptor is an MHC class I or class II receptor, at least 100 polypeptide ligands are represented in the set of polypeptide ligands ligand-profile; and further provided that the set of polypeptide ligands ligand-profile is a reproducible characteristic of the cell.

6. (Currently Amended) The set of polypeptide ligands ligand-profile of claim 1, wherein the multi-ligand binding receptor is an MHC class I or MHC class II receptor.

7. (Currently Amended) The set of polypeptide ligands ligand-profile of claim 1, wherein the multi-ligand binding receptor is not an MHC class I or MHC class II receptor.

8. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 1, wherein the multi-ligand binding receptor is a chaperone, a calnexin, a calreticulin, a mannosidase, a N-glycanase, a BIP, a grp94, a grp96, an E2 ubiquitin carrier protein, an E3 ubiquitin ligase, an unfoldase, a proteasome, a trafficking protein, or a retention protein.

9. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 1, combined with a second set of polypeptide ligands ~~ligand profile~~, the second set of polypeptide ligands ~~ligand profile~~ (a) also being a reproducible characteristic of the given cell, and (b) comprising a representation of at least ten additional polypeptide ligands, all of which bind to a second type of multi-ligand binding receptor different from the first type of receptor.

10-42. (Canceled)

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43. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 2, wherein the multi-ligand binding receptor is an MHC class I or MHC class II receptor.

44. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 2, wherein the multi-ligand binding receptor is not an MHC class I or MHC class II receptor.

45. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 2, wherein the multi-ligand binding receptor is a chaperone, a calnexin, a calreticulin, a mannosidase, a N-glycanase, a BIP, a grp94, a grp96, an E2 ubiquitin carrier protein, an E3 ubiquitin ligase, an unfoldase, a proteasome, a trafficking protein, or a retention protein.

46. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 2, combined with a second set of polypeptide ligands ~~ligand profile~~, the second set of polypeptide ligands ~~ligand profile~~ (a) also being a reproducible characteristic of the given cell, and (b) comprising a representation of at least ten additional polypeptide ligands, all of which bind to a second type of multi-ligand binding receptor different from the first type of receptor.

47. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 46, wherein the second type of multi-ligand binding receptor is an MHC class I or MHC class II receptor.

48. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 3, wherein the multi-ligand binding receptor is an MHC class I or MHC class II receptor.

49. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 3, wherein the multi-ligand binding receptor is not an MHC class I or MHC class II receptor.

50. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 3, wherein the multi-ligand binding receptor is a chaperone, a calnexin, a calreticulin, a mannosidase, a N-glycanase, a BIP, a grp94, a grp96, an E2 ubiquitin carrier protein, an E3 ubiquitin ligase, an unfoldase, a proteasome, a trafficking protein, or a retention protein.

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51. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 3, combined with a second set of polypeptide ligands ~~ligand profile~~, the second set of polypeptide ligands ~~ligand profile~~ (a) also being a reproducible characteristic of the given cell, and (b) comprising a representation of at least ten additional polypeptide ligands, all of which bind to a second type of multi-ligand binding receptor different from the first type of receptor.

52. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 51, wherein the second type of multi-ligand binding receptor is an MHC class I or MHC class II receptor.

53. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 4, wherein the multi-ligand binding receptor is an MHC class I or MHC class II receptor.

54. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 4, wherein the multi-ligand binding receptor is not an MHC class I or MHC class II receptor.

55. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 4, wherein the multi-ligand binding receptor is a chaperone, a calnexin, a calreticulin, a mannosidase, a N-glycanase, a BIP, a grp94, a grp96, an E2 ubiquitin carrier protein, an E3 ubiquitin ligase, an unfoldase, a proteasome, a trafficking protein, or a retention protein.

56. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 4, combined with a second set of polypeptide ligands ~~ligand profile~~, the second set of polypeptide ligands ~~ligand profile~~ (a) also being a reproducible characteristic of the given cell, and (b) comprising a representation of at least ten additional polypeptide ligands, all of which bind to a second type of multi-ligand binding receptor different from the first type of receptor.

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57. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 56, wherein the second type of multi-ligand binding receptor is an MHC class I or MHC class II receptor.

58. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 5, wherein the multi-ligand binding receptor is an MHC class I or MHC class II receptor.

59. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 5, wherein the multi-ligand binding receptor is not an MHC class I or MHC class II receptor.

60. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 5, wherein the multi-ligand binding receptor is a chaperone, a calnexin, a calreticulin, a mannosidase, a N-glycanase, a BIP, a grp94, a grp96, an E2 ubiquitin carrier protein, an E3 ubiquitin ligase, an unfoldase, a proteasome, a trafficking protein, or a retention protein.

61. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 5, combined with a second set of polypeptide ligands ~~ligand profile~~, the second set of polypeptide ligands ~~ligand profile~~ (a) also being a reproducible characteristic of the given cell, and (b) comprising a representation of at least ten additional polypeptide ligands, all of which bind to a second type of multi-ligand binding receptor different from the first type of receptor.

62. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 61, wherein the second type of multi-ligand binding receptor is an MHC class I or MHC class II receptor.

63-83. (Canceled)

84. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 8, wherein the multi-ligand binding receptor is a chaperone selected from the group consisting of a chaperonin, hsp60, hsp65, hsp70, hsp90, hsp25, and hsp100.

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85. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 45, wherein the multi-ligand binding receptor is a chaperone selected from the group consisting of a chaperonin, hsp60, hsp65, hsp70, hsp90, hsp25, and hsp100.

86. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 50, wherein the multi-ligand binding receptor is a chaperone selected from the group consisting of a chaperonin, hsp60, hsp65, hsp70, hsp90, hsp25, and hsp100.

87. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 55, wherein the multi-ligand binding receptor is a chaperone selected from the group consisting of a chaperonin, hsp60, hsp65, hsp70, hsp90, hsp25, and hsp100.

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and 88. (Currently Amended) The set of polypeptide ligands ~~ligand profile~~ of claim 60,
wherein the multi-ligand binding receptor is a chaperone selected from the group consisting of a
chaperonin, hsp60, hsp65, hsp70, hsp90, hsp25, and hsp100.

89-92. (Canceled)
